

Title (en)

Method and apparatus for determining TDC for each cylinder of a multi-cylinder internal combustion engine

Title (de)

Verfahren und Vorrichtung zur OT-Bestimmung für die einzelnen Zylinder eines Mehrzylinderverbrennungsmotors

Title (fr)

Procédé et appareil pour déterminer le TDC pour chaque cylindre d'un moteur à combustion interne multi-cylindre

Publication

**EP 2116836 A1 20091111 (EN)**

Application

**EP 08155626 A 20080505**

Priority

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Abstract (en)

True Top Dead Center (TDC) of an engine piston is determined through determination of the Location of Peak Pressure (LPP) using either of two simplified algorithms (EQ. 4 and 5). A Heat Loss Offset (HLO), drawn from a look-up table based on engine speed, molar mass of the air being compressed, and heat loss rate to the cylinder walls, is added to the calculated LPP (EQ. 1) to provide a corrected and true TDC position for each piston, which corrects for errors in target wheel tooth location of a camshaft position sensor (14) and for any misalignment in the target wheel during installation on an engine (10). Preferably, such a calculation is carried out for each cylinder of a multi-cylinder engine during operation thereof, thus further correcting for machining errors in the crankshaft and for crankshaft bending during the life of the engine. The invention thus allows for more accurate combustion calculations for each individual cylinder.

IPC 8 full level

**G01M 15/00** (2006.01)

CPC (source: EP)

**G01M 15/08** (2013.01)

Citation (search report)

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- [A] MAREK J STAS: "An Universally Applicable Thermodynamic Method for T.D.C. Determination", SAE TECHNICAL PAPER SERIES, 1 March 2000 (2000-03-01), warrendale, PA, US, pages 27 - 32, XP008097937

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